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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,827	12/14/2004	Hiroshi Kushitani	2004_1950A	8795

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SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

SUMMONS, BARBARA

ART UNIT	PAPER NUMBER
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2817

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/517,827	Applicant(s) KUSHITANI ET AL.	
	Examiner Barbara Summons	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The substitute specification received 10/30/06 has been approved and entered.

Withdrawn Claim Rejections - 35 USC § 102

2. The amendment and persuasive arguments received 10/30/06 have overcome the prior rejection, and it is withdrawn.

New Grounds of Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Plessky et al. U.S. 6,043,585 (of record).

Figs. 4a, 4b, 6a and 6b of Plessky et al. disclose a surface acoustic wave (SAW) filter of the invention, wherein it must be noted that the T-sections of Fig. 4a,b may be replaced with the T-sections with capacitors of Fig. 6a,b and further resonator sections may be added to the filter (see col. 7, lines 59-62) as long as the mirror symmetry (e.g. about line 127 in Fig. 4a) is maintained. Also due to the open claim language "comprising", additional elements in the filter are irrelevant to the claimed invention.

Therefore, a four T-section ladder filter with another T-section added on each side of the device in Fig. 4a,b, discloses the inventive filter comprising: a piezoelectric

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board on which are formed (see col. 3, lines 18-20) a first SAW resonator 57; a second SAW resonator 59 connected in series thereto at a first node 52 (Fig. 4a); a third SAW resonator 61 connected in series with the second resonator 59 at a second node 53; a fourth SAW resonator (57 of the added T-section) connected to the third SAW resonator 61 at a third node 55; a fifth SAW resonator 58 connected between the first node 52 and ground; a sixth SAW resonator 62 connected between the third node 55 and ground; a first capacitance element 108 connected between the second node 53 and ground (i.e. and in parallel to resonator 60); a first inductance element, being a wire lead (see col. 3, lines 55-56 and col. 1, lines 59-62) connected to the piezoelectric board at point 64, is connected between the fifth SAW resonator 58 and ground to be in series with the resonator; and a second inductance element, being a lead wire connected to the piezoelectric board at point 66, is connected between the sixth SAW resonator 62 and ground so as to be in series with the SAW resonator, wherein the wire leads are inherently inductance elements as evidence by other art of record cited below and by Applicants' claims 13, 14, 17 and 20.

Regarding claims 2 and 3, the filter also comprises a second capacitance element 109 connected between the first node 52 and ground (i.e. in parallel with resonator 58), and a third capacitance element 109 connected between the third node 55 and ground (i.e. in parallel with resonator 62). Regarding claims 4-6, 15, 16, 18 and 19, each of the capacitances is arranged on the piezoelectric board, and has toothed portions extending from an electrode of the respective node and from the ground facing that electrode, thereby forming interdigital electrode capacitances as shown in Fig. 6a.

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Regarding claims 7-12, the filter is used in a larger device by being connected to other elements by the wire leads (see col. 6, lines 30-32 and col. 7, lines 60-62).

New Grounds of Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Uu JP 10-13187 in view of Plessky U.S. 6,043,585 (each of record).

Fig. 16 of Uu discloses the invention for reasons of record as discussed in depth in paragraph 2 of the prior Office action.

However, as correctly argued by Applicants, Uu does not explicitly disclose first and second inductances respectively connected between the parallel fifth SAW resonator (51p or 52p) and sixth SAW resonator (53 or 54p) and ground so as to be in series with the associated resonator.

As noted above and evidenced by other art of record, bonding wires inherently form inductances. Additionally, the resonator connections for the input, output and ground of Uu must be made in some manner, and the only two art-recognized alternatives for doing so are face down bump bonding or by bonding wires.

Furthermore, Plessky discloses that the bonding wires and the number of bonding wires can be used to adjust the characteristics of the filter (see col. 6, lines 25-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the filter of Uu, if even necessary, such that the filter would have been mounted and connected to other devices and ground via bonding wires, which inherently provide inductances, because such an obvious modification would have been a mere art recognized alternative mounting structure, and use of bonding wires would have provided the benefit of adjusting the characteristics of the filter (i.e. via the inductances thereof), as suggested by Plessky (ibid.) and as would have been extremely well known by one of ordinary skill in the art, as also evidenced by other art of record discussed below.

Response to Arguments

7. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Satoh et al. RE37,790 provides evidence that it would have been extremely well known to adjust characteristics of a SAW ladder filter by providing bonding wire inductances in series with the parallel resonators of the filter (see e.g. Figs. 13-17 and the discussions thereof).

Similarly, Ikada U.S. 6,359,672 discloses a SAW filter using bonding wire inductances in series with the parallel resonators to adjust the characteristics of the filter (see e.g. Figs. 1, 3, 5 and 6).

Ikata et al. U.S. 6,380,823 provides evidence that bonding wires inherently are inductance elements (see Fig. 15 and col. 15, line 33), as does Ikata et al. U.S. 5,561,406 (see Fig. 8 and the discussion thereof).

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Summons whose telephone number is (571) 272-1771. The examiner can normally be reached on M-Th, M-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on (571) 271-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

bs
January 22, 2007


BARBARA SUMMONS
PRIMARY EXAMINER